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ABSTRACT

Trap setting is a concept based on a psycholinguistic explanation of the acquisition of second language skills emphasizing cognitive and creative processes over the auditory, visual, and imitative. It proposes that opportunities for repeated attempts at solving new problems through constant testing and retesting of creative hypotheses bring the learner closer to understanding the linguistic system and the cognitive strategies that work most effectively in it. It differs from both cognitive and communicative approaches by focusing more on experiential aspects of learning. The teacher can provide experiences to aid the learner to become progressively more conscious of his mental processes and the linguistic system, anticipating through the instructional materials the types of experiences the learner will have when solving a particular communicative problem. In these materials a problem situation is provided in which the student finds both confidence-builders or giveaways and traps to induce him to test and adjust his hypotheses. Trap setting materials can contain attractive challenges for students as well as a profitable learning experience. The technique increases the possibility of a more distinctive encoding of both the information given and extensions of that information. In designing materials it is important that the strategies used lead to both conceptual and linguistic distinctiveness and that the challenges have both structure and conceptual significance to be effective. (MSE)

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"TRAP SETTING" IN DIDACTIC MATERIALS

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Trap Setting is a concept based on a psycholinguistic explanation of the acquisition of second or foreign language skills. This means that it emphasizes the cognitive and creative processes over the auditory, visual and imitative. "Practice makes perfect," as the old saying goes, but not because it provides an opportunity for pattern-forming repetitious experiences as behaviorist explanations might lead one to believe. Rather, "practice makes perfect" because it means opportunities to make repeated attempts at solving new problems through constant testing and retesting of creative hypotheses, each of which brings the learner closer to understanding the linguistic system and the cognitive strategies that most efectively work within it.

It is simplistic to say that learning is imitative, since one cannot imitate unless one has previously been able to perceive, and one cannot perceive unless one has made creative hypotheses or anticipations of the perceivable phenomena. By the time this is all done, one can no longer refer to the cognitive act as imitation, and problem-solving becomes a more appropriate way to refer to the phenomena of language acquisition as well as to learning in general. Moreover, learning through problem-solving comes about precisely because erroneous or incomplete hypotheses are reformulated in the process. [1]

1 This point of view represents a cognitive approach to learning. For a good overall account of cognitive psychology, see Neisser 1976.

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According to this view, the acquisition of language skills cannot be achieved as the passive response to different teaching methods; it must be actively learned through self-motivated attempts at understanding. This is true whether we are speaking of the acquisition of a first or second language.

But not everything is equal considering the acquisition of a first language, the acquisition of a second language or even the ability to read and write the first language. There is an important difference that should probably be taken into account: the learner is always more cognitively and linguistically mature when learning second language skills or advanced first language skills.

All of this implies that in order to learn one must be self-motivated and self-directed; that in order to achieve self-motivation and direction, one can rely on a highly developed theory of the world and a complex set of needs and desires that vary from individual to individual; and at the same time, one is likely to be more receptive to direct teaching of some sort than is the learner of a first spoken language.

While Trap Setting is based on a psycholinguistic model like the so-called "cognitive" and "communicative" approaches to language teaching, I would say that it differs from both of these and would prefer to say it represented what we could call an "experiential" approach. Referring back to the implications mentioned above, we could say that the "communicative approach" takes as its basis the fact that individuals have highly developed theories of the world that are self-motivating, while the "cognitive approach" takes as its basis the fact that one is susceptible to direct teaching. In the first, the role of the teacher or facilitator is to provide or help the learner to identify relevant and motivating situations for practicing communication, simulating natural learning through direct exposure and practice with the target language. In the second more emphasis is given to explanations of linguistic phenomena to help the learner prepare for the communicative situations which

are usually provided by the teacher or facilitator but may be left to the student's fate and only exemplified in the classroom. The explanations have recently been expanded to include psycholinguistic and cognitive phenomena in general, as has been evidenced by the focus on the teaching of cognitive/communicative strategies. An "experiential approach" and, therefore, Trap Setting, take into account both factors as the basis for a classroom methodology and as criteria for developing didactic materials.

But the experiential approach does not imply <u>just</u> providing communicative experiences which might benefit the learner and providing the information which might be of use in these situations or others that the learner might have. It also implies a commitment to the understanding of that learning experience on the part of both facilitator and learner, especially on the part of the facilitator since, as the word suggests, her/his role is precisely that of facilitating the learning process. The facilitator tries to accelerate learning through teaching or instruction of some sort but, at the same time, never loses sight of the fact that each learner has her/his set of personal constructs, cognitive structure or world theory (whichever you want to call it, they're all more or less the same thing).

In order to do this, the facilitator can provide experiences that aid the learner to become progressively more and more conscious of her/his mental processes and the linguistic system so closely related to them.

The learner can be receptive to teaching as well as to clues provided by the environment in which she/he is working to solve a particular problem or sub-problem, since the direct teaching and not-so-direct[2] teaching by way of clues and hints become significant through the experience with the target language in a communicative situation.

2 I will call this not-so-direct teaching "<u>indirect</u> teaching" further on in this paper.

When I say that the linguistic system is closely related to the strategies used (mental processes), I mean that, since the strategies one uses in communicative situations are partly general and partly specific to the linguistic system being used, the learner becomes progressively more agile with the linguistic system on a chance basis depending on the cognitive strategies used and, of course, the task at hand. If these experiences with the target linguistic system were less left to chance, the process of acquisition could conceivably be accelerated taking full advantage of the teaching/learning situation.

The materials designer or facilitator could plan for and anticipate the types of experiences the learner will have when solving a particular communicative problem. That is she/he could manipulate learning experiences, without limiting them, by anticipating the hypotheses the learner will make while solving a communicative problem. Of course it will never be possible to anticipate all of the hypotheses a learner will make because, as was mentioned earlier, each learner is different in many ways. Nonetheless, it is possible to <u>almost</u> guarantee certain hypotheses being made when the environment's clues are (or seem to be) obviously pointing toward a particular idea. We can call these clues "give-aways" or even "confidence builders" when they point in the <u>right</u> direction. We can call them TRAPS when they point in the <u>wrong</u> direction.

So, just what is Trap Setting and how does one set a trap in order to meet the demanding requirements of an "experiential approach" as described in this paper? I have found that it is not an easy concept to describe and explain to others, which is partly why I have concentrated on stating reasons for Trap Setting rather than definitions. Nonetheless, in case the reader is in need of a few clues, I will attempt to hint at the specific nature of Trap Setting before going on to state another reason.

But first, I prefer to give an example of Trap Setting in didactic materials which I have designed for Mexican university

students of academic reading comprehension in English. True to an "experiential approach" to teaching and learning, I expect the reader to have a much clearer idea of just what Trap Setting is after having the opportunity to actually experience it in this material. Therefore, the reader is requested to work with the material on the following pages before going on to read the continuation of the more theoretical part of this paper.

Instructions

Imagine yourself in the following situation. You need to know some of the advantages and disadvantages of certain factors related to the designing of bathrooms for invalids. For example, you need information on space requirements, materials, etc.

The text and illustration on the following pages are from a book called: Design for Accessability* and might be of help to you.

The following are representative of the kinds of questions you might ask yourself while looking for information in the text and illustration. Answer them using the answers provided in the right-hand column according to the information you find. Notice that one of the answers will not be used.**

QUESTIONS:	ANSWERS: ***
1. What is shown in Detail 2.3b?	a) diagonal
2. What kind of "grab bars" are illustrated in Details 2.3a, 2.3b and 2.3c?	b) 1.52 m.
	c) 2.14 m.
3. What type of "grab bars" can we assume to be not represented in the illustration due to the fact that the author considers them to be impractical and possibly dangerous?	d) horizontal
	e) the minimum width for the "ideal" toilet
	f) a lateral approach

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* Sorensen, Robert. Design for Accessability. New York: McGraw Hill Book Company, 1979: 3-10.

** Instructions may be written in Spanish if desired.

*** Each question and answer can be written on individual 3 by 5 inch cards.

4. What is the preferred width for a toilet which would give maximum access to persons with various types of paralizing disabilities?

5. What is made explicit in Detail 2.3c but not stated in the text?

6. What approach can be accomplished in the toilet in Detail 2.3c?

7. What is not possible in the "ideal" toilet illustrated in Detail 2.3c?

g) the lateral approach from either the left or right side according to the special needs of the individual.

h) an approach that is slightly better than the frontal but is not as comfortable as an approach which allows the invalid to slide sideways onto the new seat.

WHEELCHAIR

The most difficult appliance in bulk, weight, and spatial requirements is, of course, the wheelchair. In general, where spaces and clearances are designed to allow for the use of wheelchairs, the spaces will be usable by persons using all the other devices, and by the general public also.

The person confined to a wheelchair may be able, within the physical and spatial limitations of the chair, to operate much as a fully ambulatory person. Others, however, because of the nature of their handicap, may be able to approach or use facilities only from a certain direction or only by a certain process or approach.

The basic maneuver in using a wheelchair is the procedure of getting into or out of the chair. The methods are:

Frontal: The chairbound person approaches and positions the chair in front of and facing the new seat, and sets the brake on the chair. Setting his or her feet on the floor and using the chair arms and adjacent grab bars, the person stands upright. Using the grab bars at the sides of the new seat or location, the person turns his or her body 180 degrees, still standing, and lets himself or herself down onto the new seat.

Diagonal: This is essentially the same as the frontal approach, but with the chair at an angle to the new seat. Since the body needs to be turned through a smaller angle, this is a slightly easier operation than the frontal approach, but requires sufficient room for the chair to stand at an angle to the new seat.

Lateral: The wheelchair is brought alongside the new

position, facing in the direction the person will be seated in when finished. The brakes are set, the arm of the chair is collapsed, and the person slides sideways out of the chair onto the new seat.

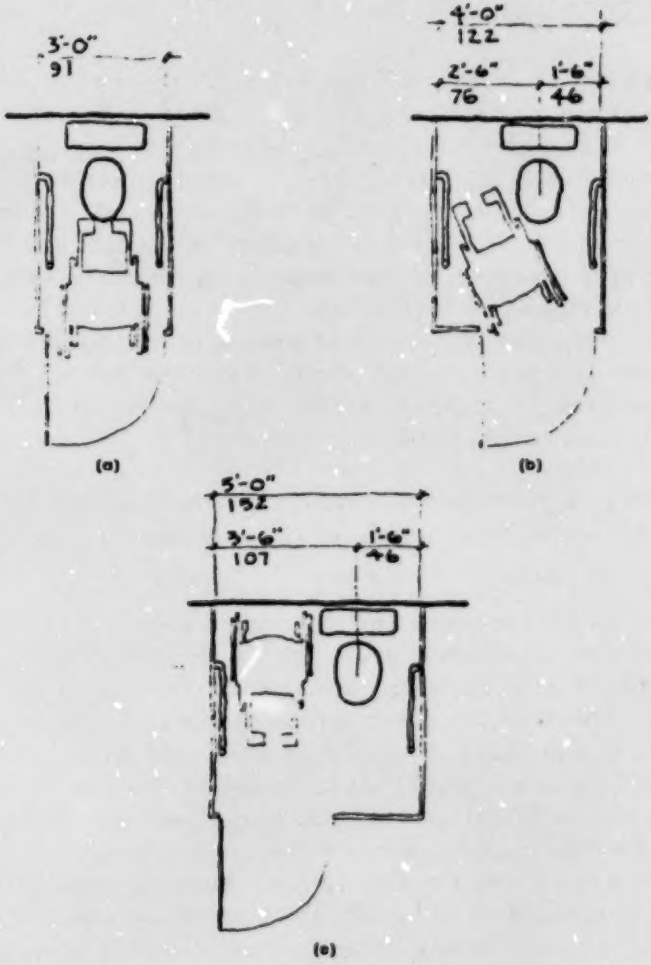
Reverse: The chair is turned around and backed up to the new seat and the brakes are set. The back of the chair is collapsed and the person, again using the chair seat and grab bars, slides himself or herself out of the back of the chair onto the new seat.

Since most models of wheelchairs are available with collapsible arms and since the lateral approach does not require the wheelchair user to reach a standing position, this method is generally preferable where possible. The reverse approach is not generally desirable because it requires the user to drag his or her feet and lower body out over the back of the chair. Because of spatial limitations, the frontal approach is the one most usually provided for, even though it is not the preferred one. In some cases, for example at waterclosets, where the wheelchair user must make a frontal approach but cannot stand up, he or she must slide forward to straddle the fixture, while facing backwards, which is a highly uncomfortable position.

Whenever possible, space should be provided for a lateral approach, preferably for both a right and a left approach (since some persons can operate on only one side of their body).

Some sources show or recommend diagonal grab bars. Generally these should be avoided, since they are basically a compromise between a horizontal grab (with which one lifts the body), and a vertical grab (with which one pulls the body up). For a diagonal bar to be usable, it must be long enough to be grasped with the hand, while bracing the elbow on the bar at the other end, and pulled with the hand, while pushing or lifting with the elbow. This process is difficult for the weak and the elderly.

If diagonal bars must be used, they should never be used singly, but always in pairs on either side of the body. The use of a single diagonal bar may cause a person's body to rotate as it rises, making him or her lose balance and fall.



DETAIL 2 3a Minimum-width toilet - frontal approach only
DETAIL 2 3b Intermediate-width toilet - diagonal approach
DETAIL 2 3c "Ideal" width toilet - lateral approach possible

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If the final answers are not: 1-h; 2-d; 3-a; 4-c; 5-e; 6-f and 7-g, then it will be necessary for the reader to go back to the text, illustration and questions to try to find out why. It is possible that the reader fell into one or two Traps that can now be identified and analyzed as to their didactic implications. (Notice especially question 4.)

After having experienced Trap Setting, the reader may have come to the conclusion that it has something to do with the placing of traps in an environment of give-aways or confidence-builders. It will be noticed that by this means a situation is produced in which students' hypotheses, both correct and incorrect, can be forseen by the facilitator or materials designer. Also it should be clear to the reader by now that an approach of this sort places much more emphasis on the learner having to analyze why and how the linguistic system works to produce communication rather than on the learner's actual production of either written or spoken target language. In other words, it is an 'input-centered' approach rather than an 'output-centered' one.[3]

Previously, I promised to explain another reason for Trap Setting in didactic materials, but first it seems necessary to re-

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[3] This is a point of controversy and not one to be taken lightly or explained superficially when advocating one or the other in an approach to language teaching and learning. Most authors in the field seem to represent one stand or the other although many do not make this explicit. That is, one tends to be either an output advocate or an input faithful. What is obviously true, however, is that you can have the input without the output but you can't have the output without the input. I assume, therefore, that comprehensible input (Krashen 1981) is essential for any kind of language acquisition, and that it is more important to have this than productive skills, the acquisition of which may easily follow comprehension when the needs arise.

capitulate some of the reasons mentioned earlier:

1. Trap Setting means opportunities for learners to make repeated attempts at solving new problems through constant testing and retesting of creative hypotheses which bring the learner closer to understanding the linguistic system and the cognitive strategies that most effectively work within it. This is important because when a learner makes a 'mistake', she or he has the raw material for learning. This raw material can best be taken advantage of if the learner has been able to identify the problem and its causes.

2. Trap Setting means opportunities for the facilitator or materials designer to prepare and provide, when needed, helpful clues or suplementary materials which deal with the linguistic phenomena likely to have caused the mistake. In some well-planned cases of trap setting no help will be needed beyond some form of signaling problem areas. But when it is found to be necessary, direct and indirect teaching will be highly significant to the learner.[4]

One more reason which will be explained in more detail below is that

3. Trap Setting means that learners will have the opportunity to tackle difficult problems.

J. S. Bruner (1966), in his book Toward a Theory of Instruction, discusses the different aspects of intrinsic motivation, a concept which proves useful in dealing with the argument that difficulty can be a positive factor in didactic materials. Among the different

[4] See Ausubel 1968 for a most interesting discussion of "significance" and its relationship to learning.

types of intrinsic motivation, Bruner mentions "curiosity" and the "desire for competence," both of which are factors that are important to the concept of Trap Setting.

That is, it has been shown that humans are naturally curious to investigate and know more (if one has not been too damaged by traditional education) especially when presented with an obstacle -- something unclear or incomplete. What satisfies the person is reaching clarity or even just the search for clarity which is satisfying in itself. Also, people are naturally desirous of feeling competent. This means that people tend to be more interested in activities in which it is possible for them to reach a certain competence. Demonstrating competence, though, requires an activity that is not easily mastered.

For these reasons one invites challenges if they don't seem too remote; one likes to attempt to clarify doubts; one likes to feel the sensation of having done it in adverse circumstances. Nonetheless, if the achieving seems too remote, one doesn't try, That would be something closer to insanity, I believe, than to natural motivation and may be the cause of much of the frustration that students feel when asked to complete activities that are incomprehensible to them.

We are interested, then, in what constitutes an attractive challenge to a student, while at the same time constituting a profitable learning experience. It seems to be the case that challenge and learning go hand in hand; that a challenging, difficult situation produces more learning than does an effortless one that produces little or no challenge.

To support this viewpoint, I refer the reader to several investigations that attempt to show how difficulty or related concepts positively influence recall (Jacoby, Craik and Begg 1979; Glover,

Plake and Zimmer 1982; Urdal 1983). These investigations and others tend to show that difficulty and related phenomena, such as the need to make inferences, do have a positive influence on recall. This is explained through a concept called "distinctiveness of encoding" which refers to the fact that a more difficult processing of information implies a more distinct perception of the ideas involved. This more distinct perception, like a more distinct visual perception of an object, is the factor which seems to aid in future recall.

I propose that Trap Setting, if done taking into account certain restrictions which we have either already dealt with or will be dealing with shortly, increases the possibility of a more distinctive encoding of the information given as well as implicatures and other extensions of the information given that depend on individual interpretations and other factors. This implies that both comprehension and recall are increased. But one question remains. Just what kind of recall can we expect? Will it be conceptual only or also recall relating to the regularities (grammatical, discourse, etc.) of the second language?

If it is true, as I stated earlier, that linguistic abilities and knowledge are intricately tied up with the strategies one uses for comprehension and for solving problems when these problems involve linguistic phenomena, then the need to employ strategies leading to <u>conceptual</u> distinctiveness in communicative activities[5] should also involve strategies leading to <u>linguistic</u> distinctiveness and later recall. Although some consciousness-raising facilitated through a teacher's interventions is likely to be helpful in many cases, the actual distinctiveness of encoding related to the conceptual and linguistic information can probably be attributed to the challenging, problem-solving situation.

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[5] See Urdal 1982 for a definition of "communicative activities" and a very general discussion of how the concept of "problem-solving" constitutes an important element.

Before concluding, I would like to deal with two more concepts that seem to me to be important to the ideas set forth in this paper. These concepts have to do with the qualities which make a challenge look more (or less) attractive to a student and constitute some of the more important restrictions on Trap Setting. They are structure and conceptual significance.

By structure I am referring to the fact that an activity, text, or whatever, should have a perceivable beginning, plan and end. Structure is advisable for several reasons: 1) it creates a feeling of "closure" when the activity is finished, increasing in this way the pleasure of success; 2) in the same way, it makes success seem more likely when a student is evaluating her/his chances to successfully complete the activity; 3) it aids in the problem-solving process itself in that it provides grounds on which possible hypotheses can be made as well as feedback given on the usefulness of the hypotheses. Obviously, the concept of structure is somewhat vague, since it is not always clear what constitutes a beginning, plan and end that is perceivable to the problem solver. In the activity "Wheel-chairs," there is a complete, unabridged text and a certain situational buildup which clarifies an imaginary goal. The answers to the questions are not openended and subjective; rather they are clearly limited so that the student is not overwhelmed by the final task. All of these are factors which might contribute to a sense of structure in this activity, and thereby, to the advantages which are stated above.

"Significance" has been partially dealt with in this paper when we discussed external intervention such as direct and indirect teaching that can be significant to the learner only if the learner is cognitively ready to perceive the concepts involved. At that time I was dealing more with the linguistic regularities that the teacher/facilitator or materials writer might want to point out to the student basically to aid in the problem-solving process. Conceptual significance involves the actual content that the language

serves to communicate and the degree of familiarity to the student. I will take the liberty to extend Ausubel's idea of significance to include not only familiarity but also importance to the student. This is in keeping with the original use in this paper and in Ausubel, although I don't believe it is actually stated in this way there. This is because the ability to make anticipations (familiarity) is not enough for perception. Significant learning also implies the need or desire to perceive (importance).

What I call the "impact" of a learning experience depends on at least three things: 1) the need to perceive a reason for perceiving something (what we need or want to know); 2) the ability to perceive (related to what we already know); and 3) the degree or quantity of cognitive modifications (changes in what we already know) caused by perceiving. Significant learning has impact and is different from rote learning because: 1) it is based on familiarity; 2) it is important to the learner; and 3) it causes changes in the cognitive structure of the learner. For the same reasons it is different from some types of problem-solving which, while presenting the quality of trap setting, do not present the quality of conceptual significance. The concepts involved have no importance and often very little familiarity to the student when they have no personal, social or professional value or common sense realism. As a result, conceptually, the student feels no need or desire to attempt comprehension, and the very limited foundation of familiarity with the concepts involved results in unnecessary encumberments to the formulation of hypothetical anticipations and their reformulation. I am referring to those "brain teasers" and "logical problems" with their own very special rules and restrictions, which while successfully creating challenging activities and providing effective instruments for psychological investigations into human problem-solving, quickly become tiring to normal students (that is, those who are not fanatics of such timekillers on a regular basis).

If this viewpoint sounds fanatically academic or anti-diversion-in-the-classroom, let me clarify that the concept of Trap Setting as set forth in this paper is a direct descendent of the brain-teasing, logical problem approach to communicative activities in the classroom. But, after having given that approach its own special adaptations to the academic reading comprehension classroom, and after having begun to analyze the components of both original approach and adaptations, I have come to the conclusion that restrictions such as structure and conceptual significance are more important than is often realized in problem-solving-based activities. While many brain teasers do contain structure, the lack of conceptual significance reduces its usefulness as a motivating factor and a hypothesis-confirming device. However, the combination of these two elements in activities that resemble brain teasers, in the aspect of challenge and complex mental processes required, characterize what I call Trap Setting in didactic materials.

Although this paper has been specifically directed toward a discussion of Trap Setting, it has also been a more or less thorough account of my view of problem-solving and experiential learning as groundwork to what I call an experiential approach. Trap Setting is just one very important element of that approach. It is a concept that I hope will be of use to other teacher/facilitators and materials writers when forming their own personal approaches to language teaching and learning or to those who wish to apply and extend an experiential approach as described here.

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